

Claim 3. The method in accordance with claim 1 further comprising creation of an arrangement of laser-induced damages, which being illuminated, reconstruct the holographic image of the object.

Claim 4. The method in accordance with claim 1 further comprising the transformation of the interference pattern into damage arrangement by the division of the transparent material area into several regions and production of laser-induced damages inside said regions so that said damages approximate the interference pattern.

Claim 5. The method in accordance with claim 1 further comprising creation of an arrangement of laser-induced damages wherein the coordinates of points, at which the breakdowns should be produced, are determined as a result of independent trials with possible outcomes described by probability density function, which is proportional to the intensity of corresponding interference pattern.

Claim 9. Method for production of small laser-induced damages by controlling and transforming wavelength of laser radiation generating breakdowns at the predetermined points of transparent materials, comprising:

- determination of functional dependence of damage sizes from sizes of focal point for given transparent material;
- determination of focal point sizes corresponding to damage sizes;
- transformation of laser radiation so that it has the wavelength corresponding to demanded damage sizes;
- generating laser radiation of determined wavelength and focusing the transformed laser radiation at the predetermined points of transparent material to generate laser-induced breakdowns.

Please, examine claims 6-8 and 10-12 which are rewritten:

Claim 6. The method in accordance with claim 1 including creation of combined arrangement of laser-induced damages, which provide both reproduction of laser-

induced images and reconstruction of laser-induced holograms inside transparent materials.

Claim 7. The method in accordance with claim 6 further comprising production of an interference pattern on at least one side of a transparent material containing a laser-induced image.

Claim 8. The method in accordance with claim 6 further comprising production of iridescent background by creating an arrangement of the damages corresponding to a diffraction grating or an iridescent hologram.

Claim 10. Laser-computer system for production of laser-induced holograms comprising:

- a first computer system for calculation of interference pattern, corresponding given object;
- a second computer system for transformation of the said interference pattern into arrangement of points, so that laser-induced damages, created at these points, are able to reconstruct high quality holographic image without internal split of transparent material;
- laser system for generating laser radiation to create laser-induced damages of demanded sizes;
- optical and moving systems for focusing laser radiation at the predetermined points of the transparent material to produce the breakdowns at these points.

Claim 11. The controlling system which in accordance with claim 10, controls a laser system for generating radiation with the wave length corresponding to the needed sizes of laser-induced damages.

Claim 12. The system of claim 10 wherein the laser system generates a harmonic of the fundamental wavelength produced by the laser and transforms of the said radiation into the second (or high) harmonic to create laser-induced damages inside the transparent material.

Please, add the following new claim:

Claim 13. The laser system in accordance with claim 12 further comprising a diode-pumped Nd-YAG laser generating radiation for creating laser-induced marks inside transparent materials.